WHAT IS CLAIMED IS:

1. An optical waveguide ferrule comprising:

a carrier tube having a central axis which extends in a longitudinal direction;

a waveguide carrier located within the carrier tube; and

Sub. C1

an optical waveguide extending lengthwise in the longitudinal direction within the waveguide carrier;

wherein the waveguide carrier comprises a first carrier body having a first principal surface and a second carrier body having a second principal surface which confronts the first principal surface,

wherein the first principal surface has a first groove defined therein which extends lengthwise in the longitudinal direction, and wherein the second principal surface has a second groove defined therein which extends lengthwise in the longitudinal direction, and

wherein the first and second grooves are aligned with one another to define an elongate cavity which extends lengthwise in the longitudinal direction, and wherein the optical waveguide is contained within the elongate cavity.

2. An optical ferrule as claimed in claim 1, wherein the first and second carrier bodies are silicon bodies.

3. An optical ferrule as claimed in claim 1, wherein the first and second principal

surfaces of the first and second carrier bodies are adhered to one another.

4. An optical ferrule as claimed in claim 1, wherein the optical waveguide is coincident with the central axis of the carrier tube.

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5. An optical ferrule as claimed in claim 1, wherein the first and second carrier bodies have a same cross-sectional configuration in a plane perpendicular to the longitudinal direction.

6. An optical ferrule as claimed in claim 5, wherein the first and second carrier bodies are silicon bodies.

7. An optical ferrule as claimed in claim 5, wherein the waveguide carrier has a rectangular cross-sectional configuration in the plane perpendicular to the longitudinal direction.

8. An optical ferrule as claimed in claim 5, wherein the waveguide carrier has a hexagonal cross-sectional configuration in the plane perpendicular to the longitudinal direction.

9. An optical ferrule as claimed in claim 5, wherein the waveguide carrier has a octagonal cross-sectional configuration in the plane perpendicular to the longitudinal direction.

Sub. C1

10. An optical ferrule as claimed in claim 1, wherein each of the first and second carrier bodies have a trapezoidal cross-sectional configuration in a plane perpendicular to the longitudinal direction.

11. An optical ferrule as claimed in claim 10, wherein the trapezoidal cross-sectional configuration is an isosceles trapezoidal cross-sectional configuration.

12. An optical ferrule as claimed in claim 1, wherein the first carrier body has a cross-sectional configuration in a plane perpendicular to the longitudinal direction that is defined by at least opposite first and second parallel surfaces and opposite first and second inclined surfaces, wherein the second carrier body has a cross-sectional configuration in the plane perpendicular to the longitudinal direction that is defined by at least opposite third and fourth parallel surfaces and opposite third and fourth inclined surfaces, wherein the first parallel surface is longer than the second parallel surface and the third parallel surface is longer than the fourth parallel surface, and wherein first parallel surface is the first principal surface of the first carrier body and the third parallel

surface is the second principal surface of the second carrier body.

Sub. C1

13. An optical ferrule as claimed in claim 1, wherein the first carrier body has a cross-sectional configuration in a plane perpendicular to the longitudinal direction that is defined by at least opposite first and second parallel surfaces and opposite first and second inclined surfaces, wherein the second carrier body has a cross-sectional configuration in the plane perpendicular to the longitudinal direction that is defined by at least opposite third and fourth parallel surfaces and opposite third and fourth inclined surfaces, wherein the first parallel surface is longer than the second parallel surface and the third parallel surface is longer than the fourth parallel surface, and wherein second parallel surface is the first principal surface of the first carrier body and the fourth parallel surface is the second principal surface of the second carrier body.

14. A optical waveguide ferrule as claimed in claim 1, wherein a cross-sectional configuration in a plane perpendicular to the longitudinal direction of an inner periphery of the carrier tube conforms with a cross-sectional configuration in the plane perpendicular to the longitudinal direction of an outer periphery of the waveguide carrier.

15. An optical waveguide ferrule comprising:

a carrier tube having a central axis which extends in a longitudinal direction;

a waveguide carrier located within the carrier tube; and

a plurality of optical waveguides extending lengthwise in the longitudinal direction within the waveguide carrier;

Sub. A1

wherein the waveguide carrier comprises a first carrier body having a first principal surface and a second carrier body having a second principal surface which confronts the first principal surface,

wherein the first principal surface has a plurality of first grooves defined therein which extend lengthwise in the longitudinal direction, and wherein the second principal surface has a plurality of second grooves defined therein which extend lengthwise in the longitudinal direction,

wherein the plurality of first grooves are aligned with the plurality of second grooves to define a plurality of elongate cavities which extend lengthwise in the longitudinal direction, and

wherein the plurality of optical waveguides are contained within the plurality of elongate cavities, respectively.

16. An optical ferrule as claimed in claim 15, wherein the first and second carrier bodies are silicon bodies.

17. An optical ferrule as claimed in claim 15, wherein the first and second

principal surfaces of the first and second carrier bodies are adhered to one another.

18. An optical ferrule as claimed in claim 15, wherein one of the plurality of optical waveguides is coincident with the central axis of the carrier tube.

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19. An optical ferrule as claimed in claim 15, wherein the first and second carrier bodies have a same cross-sectional configuration in a plane perpendicular to the longitudinal direction.

20. An optical ferrule as claimed in claim 19, wherein the first and second carrier bodies are silicon bodies.

21. An optical ferrule as claimed in claim 19, wherein the waveguide carrier has a rectangular cross-sectional configuration in the plane perpendicular to the longitudinal direction.

22. An optical ferrule as claimed in claim 19, wherein the waveguide carrier has a hexagonal cross-sectional configuration in the plane perpendicular to the longitudinal direction.

23. An optical ferrule as claimed in claim 19, wherein the waveguide carrier has a octagonal cross-sectional configuration in the plane perpendicular to the longitudinal direction.

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24. An optical ferrule as claimed in claim 15, wherein each of the first and second carrier bodies have a trapezoidal cross-sectional configuration in a plane perpendicular to the longitudinal direction.

25. An optical ferrule as claimed in claim 24, wherein the trapezoidal cross-sectional configuration is an isosceles trapezoidal cross-sectional configuration.

26. An optical ferrule as claimed in claim 15, wherein the first carrier body has a cross-sectional configuration in a plane perpendicular to the longitudinal direction that is defined by at least opposite first and second parallel surfaces and opposite first and second inclined surfaces, wherein the second carrier body has a cross-sectional configuration in the plane perpendicular to the longitudinal direction that is defined by at least opposite third and fourth parallel surfaces and opposite third and fourth inclined surfaces, wherein the first parallel surface is longer than the second parallel surface and the third parallel surface is longer than the fourth parallel surface, and wherein first parallel surface is the first principal surface of the first carrier body and the third parallel

surface is the second principal surface of the second carrier body.

27. An optical ferrule as claimed in claim 15, wherein the first carrier body has a cross-sectional configuration in a plane perpendicular to the longitudinal direction that is defined by at least opposite first and second parallel surfaces and opposite first and second inclined surfaces, wherein the second carrier body has a cross-sectional configuration in the plane perpendicular to the longitudinal direction that is defined by at least opposite third and fourth parallel surfaces and opposite third and fourth inclined surfaces, wherein the first parallel surface is longer than the second parallel surface and the third parallel surface is longer than the fourth parallel surface, and wherein second parallel surface is the first principal surface of the first carrier body and the fourth parallel surface is the second principal surface of the second carrier body.

28. A optical waveguide ferrule as claimed in claim 15, wherein a cross-sectional configuration in a plane perpendicular to the longitudinal direction of an inner periphery of the carrier tube conforms with a cross-sectional configuration in the plane perpendicular to the longitudinal direction of an outer periphery of the waveguide carrier.

29. A method of making an optical waveguide ferrule, comprising:

etching a silicon wafer to form a plurality of grooves which extend parallel to one

another in a first surface of the silicon wafer;

etching the silicon wafer to form a plurality of trenches in a second surface of the silicon wafer which is opposite the first surface, wherein the trenches are formed so as to extend parallel to one another between respectively adjacent pairs of the parallel grooves and in a same direction as the parallel grooves;

Sub. A1

separating the silicon wafer into discrete chips at respective bottoms of the trenches such that the first surface of each of the discrete chips includes at least one of the grooves;

placing an optical waveguide in a groove of a first one of the discrete chips;

placing the first surface of a second one of the discrete chips against the first surface of the first one of the discrete chips such that the groove of the first one of the discrete chips is aligned with a groove of the second one of the discrete chips, wherein the optical waveguide is enclosed between the respective grooves of the first and second discrete chips.

30. The method as claimed in claim 29, wherein the silicon wafer is separated into the discrete chips by the etching of the trenches to a depth which reaches the first surface of the silicon wafer.

31. The method as claimed in claim 29, wherein the silicon wafer is separated into

the discrete chips by a dicing saw.

Rule 126

32 ~~31~~. A method of making an optical waveguide ferrule, comprising:

etching a silicon wafer to form a plurality of grooves which extend parallel to one another in a first surface of the silicon wafer;

etching the silicon wafer to form a plurality of trenches in the first surface of the silicon wafer, wherein the trenches are formed so as to extend parallel to one another between respectively adjacent pairs of the parallel grooves and in a same direction as the parallel grooves;

separating the silicon wafer into discrete chips at respective bottoms of the trenches such that the first surface of each of the discrete chips includes at least one of the grooves;

placing an optical waveguide in a groove of a first one of the discrete chips;

placing the first surface of a second one of the discrete chips against the first surface of the first one of the discrete chips such that the groove of the first one of the discrete chips is aligned with a groove of the second one of the discrete chips, wherein the optical waveguide is enclosed between the respective grooves of the first and second discrete chips.

33. The method as claimed in claim 32, wherein the silicon wafer is separated into

the discrete chips by the etching of the trenches to a depth which reaches a surface of the silicon wafer which is opposite the first surface.

34. The method as claimed in claim 32, wherein the silicon wafer is separated into the discrete chips by a dicing saw.